Mich Potash
MI-133-1I-0005
Permit Apl

Well Const & Plugging
P&A plan 10/1/14
P&A PLAN 5/22/15

NOTE: DIRECTIONALLY DRILLED WELL

SURFACE CASING: $13\frac{3}{8}$, $17\frac{1}{2}$ → 1.4396 ft³/ft³
(Cement yield → 1.47 ft³/Sk)

$$(320\ Sk)\left(\frac{1.47\ ft^3}{Sk}\right)\left(\frac{1.4396\ ft}{ft^3}\right) = 677\ ft$$

✓ (*) Not Cemented to Surface ? ok

✓ (*) Permit Apl Section F Well diagram Not Consistent w/ Sec L Well Construction description

Diagram → $13\frac{3}{8}$ Casing & $17\frac{1}{2}$ hole
Description → 9⅝ Casing & $13\frac{1}{2}$ hole

? P&A plan does not identify any Well Const. ok

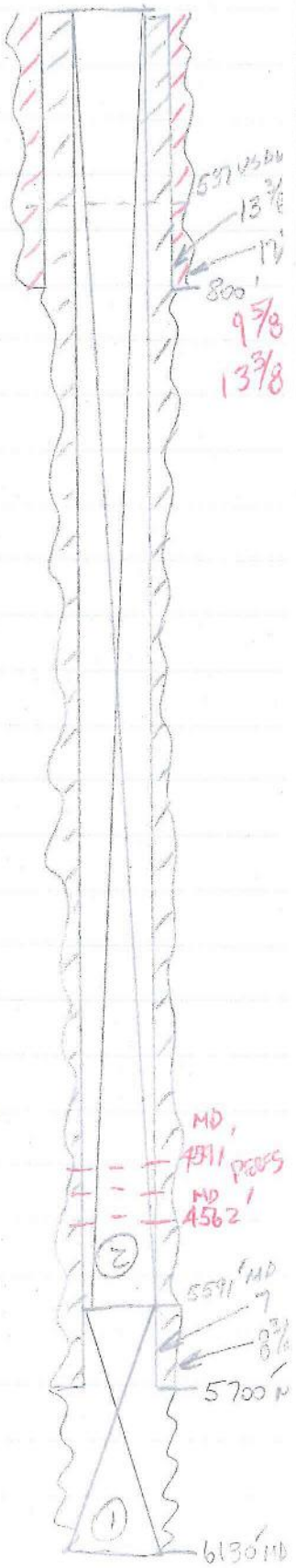
PRODUCTION CASING: 7", $8\frac{3}{4}$ → 6.6520 ft/ft³
(Cement yield → 1.24 ft³/Sk & 1.47 ft³/Sk)

STAGE 1 $(270\ Sk)\left(\frac{1.24\ ft^3}{Sk}\right)\left(\frac{6.6520\ ft}{ft^3}\right) = 2,227\ ft$

STAGE 2 $(473\ Sk)\left(\frac{1.47\ ft^3}{Sk}\right)\left(\frac{6.6520\ ft}{ft^3}\right) = 4,625\ ft$

TOTAL: 6852 ft

ft
ok



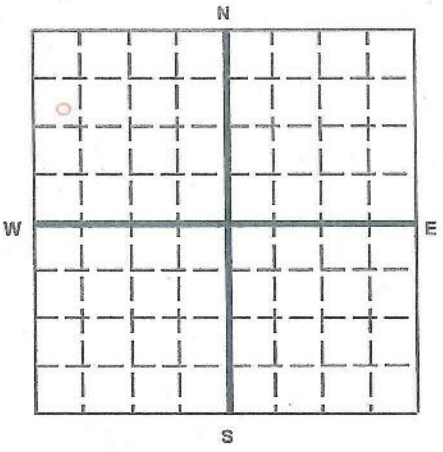
OMB No. 2040-0042 Approval Expires 11/30/2014

United States Environmental Protection Agency
Washington, DC 20460

PLUGGING AND ABANDONMENT PLAN

Name and Address of Facility	Name and Address of Owner/Operator
MPC 2D	Michigan Potash Operating, LLC c/o Fox Rothschild 1225 17th Street, Suite 2200, Denver, CO 80215

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Michigan	Osceola	

Surface Location Description

se 1/4 of sw 1/4 of nw 1/4 of nw 1/4 of Section 31 Township 17 Range 8

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location ____ ft. frm (N/S) N Line of quarter section 1050'FRM N

and ____ ft. from (E/W) W Line of quarter section. 396'FRM W

TYPE OF AUTHORIZATION

- [x] Individual Permit
- [ ] Area Permit
- [ ] Rule

Number of Wells 1

Lease Name

WELL ACTIVITY

- [x] CLASS I
- [ ] CLASS II
  - [x] Brine Disposal
  - [ ] Enhanced Recovery
  - [ ] Hydrocarbon Storage
- [ ] CLASS III

Well Number MPC 2D

CASING AND TUBING RECORD AFTER PLUGGING

SIZE	WT (LB/FT)	TO BE PUT IN WELL (FT)	TO BE LEFT IN WELL (FT)	HOLE SIZE
7	23-28	0	5700	8 3/4

METHOD OF EMPLACEMENT OF CEMENT PLUGS

- [ ] The Balance Method
- [ ] The Dump Bailer Method
- [ ] The Two-Plug Method
- [x] Other

CEMENTING TO PLUG AND ABANDON DATA:	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Size of Hole or Pipe in which Plug Will Be Placed (inche	8 3/4"	7"					
Depth to Bottom of Tubing or Drill Pipe (ft							
Sacks of Cement To Be Used (each plug)	160.00	1030					
Slurry Volume To Be Pumped (cu. ft.)	233.00	1511.00					
Calculated Top of Plug (ft.)	5590	0					
Measured Top of Plug (if tagged ft.)							
Slurry Wt. (Lb./Gal.)	14.2	14.2					
Type Cement or Other Material (Class III)	A	A					

LIST ALL OPEN HOLE AND/OR PERFORATED INTERVALS AND INTERVALS WHERE CASING WILL BE VARIED (if any)

From	To	From	To
5185 TVD, 5700 MD	5550 TVD, 6130 MD		

Estimated Cost to Plug Wells

$ 30,400

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Theodore A. Pagano, P.E., P.G., General Manager		10/01/2014